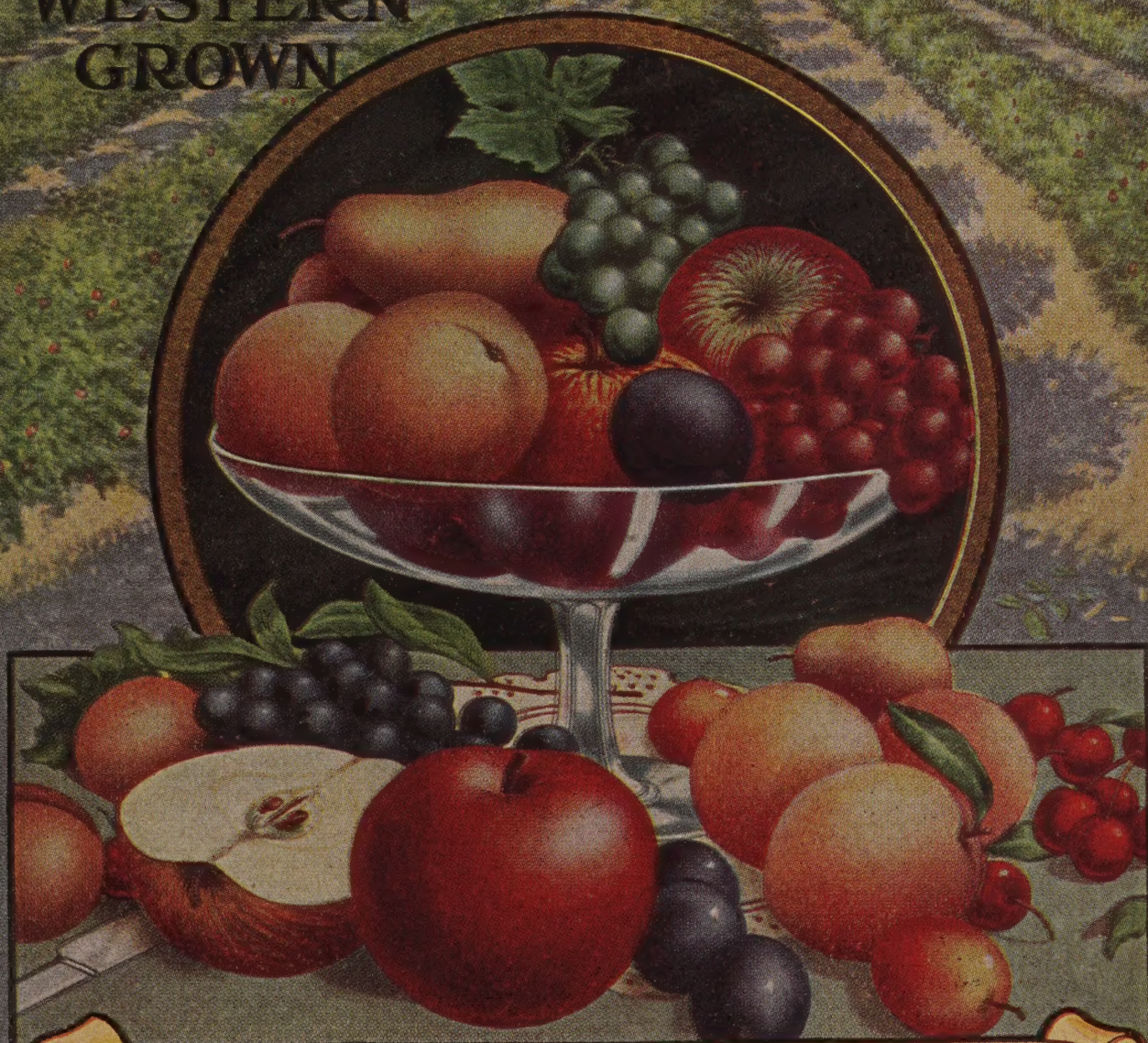


# ORCHARDS AND GOOD FRUITS

NORTHERN  
AND  
WESTERN  
GROWN



Published by  
**VIRGINIA-CAROLINA CHEMICAL CO.**  
RICHMOND, VIRGINIA



# High Grades of Fertilizers

Recommended by

The Soil Improvement Committee of the  
National Fertilizer Association.

| Crop                             | Sandy Soil<br>APA-A-P | Loam Soil<br>APA-A-P | Clay Soil<br>APA-A-P |
|----------------------------------|-----------------------|----------------------|----------------------|
| Alfalfa, seeded down             | 10-2-4                | 12-2-2               | 12-2-0               |
| Alfalfa, top dressing            | 12-0-4                | 12-0-2               | 16-0-0               |
| Asparagus                        | 7-5-2                 | 7-5-2                | 7-5-2                |
| Apples, sod orchard              | 7-5-2                 | 8-6-0                | 8-6-0                |
| Apples, tilled orchard           | 10-3-4                | 10-3-2               | 12-3-0               |
| Barley                           | 10-2-4                | 12-2-2               | 12-2-0               |
| Buckwheat                        | 10-2-4                | 12-2-2               | 12-2-0               |
| Brussels Sprouts                 | 10-3-4                | 10-3-2               | 12-3-0               |
| Beets                            | 10-3-4                | 10-3-2               | 12-3-0               |
| Beans, garden                    | 10-3-4                | 10-2-4               | 10-2-4               |
| Beans, field                     | 10-2-4                | 12-2-2               | 12-2-0               |
| Blackberries                     | 12-2-2                | 12-2-2               | 12-2-2               |
| Corn, for grain                  | 10-2-4                | 12-2-2               | 12-2-0               |
| Corn, for silage                 | 10-2-4                | 12-2-2               | 12-2-0               |
| Clover, seeding                  | 10-2-4                | 12-2-2               | 12-2-0               |
| Clover, top dressing             | 12-0-4                | 12-0-2               | 16-0-0               |
| Cabbage                          | 10-3-4                | 10-3-2               | 12-3-0               |
| Cauliflower                      | 10-3-4                | 10-3-2               | 12-3-0               |
| Carrots                          | 10-3-4                | 10-3-2               | 12-3-0               |
| Cucumbers                        | 10-3-4                | 10-3-2               | 12-3-0               |
| Celery                           | 10-3-4                | 10-3-2               | 12-3-0               |
| Grass, seeding                   | 10-2-4                | 12-2-2               | 12-2-0               |
| Lettuce                          | 10-3-4                | 10-3-2               | 12-3-0               |
| Millet                           | 10-2-4                | 12-2-2               | 12-2-0               |
| Meadow, top dressing             | 7-5-2                 | 8-6-0                | 8-6-0                |
| Mangels                          | 10-3-4                | 10-3-2               | 12-3-0               |
| Melons                           | 10-3-4                | 10-3-2               | 12-3-0               |
| Oats                             | 10-2-4                | 12-2-2               | 12-2-0               |
| Onions                           | 8-2-8                 | 8-2-8                | 8-2-8                |
| Permanent Pastures, top dressing | 12-0-4                | 12-0-2               | 16-0-0               |
| Parsnips                         | 10-3-4                | 10-3-2               | 12-3-0               |
| Potatoes, late                   | 10-3-4                | 10-3-2               | 12-3-0               |
| Peas, field                      | 10-2-4                | 12-2-2               | 12-2-0               |
| Peas, garden                     | 10-3-4                | 10-2-4               | 10-2-4               |
| Peaches                          | 7-5-2                 | 8-6-0                | 8-6-0                |
| Rye, fall seeding                | 10-2-4                | 12-2-2               | 12-2-0               |
| Rye, spring top dressing         | 7-5-2                 | 8-6-0                | 8-6-0                |
| Rutabagas                        | 10-3-4                | 10-3-2               | 12-3-0               |
| Raspberries                      | 12-2-2                | 12-2-2               | 12-2-2               |
| Sweet Corn                       | 10-3-4                | 10-3-2               | 12-3-0               |
| Sugar Beets                      | 10-3-4                | 10-3-2               | 12-3-0               |
| Spinach                          | 7-5-2                 | 7-5-2                | 7-5-2                |
| Strawberries, spring setting     | 10-3-4                | 10-3-2               | 12-3-0               |
| Strawberries, top dressing       | 7-5-2                 | 8-6-0                | 8-6-0                |
| Squash                           | 10-3-4                | 10-3-2               | 12-3-0               |
| Timothy, top dressing            | 7-5-2                 | 8-6-0                | 8-6-0                |
| Turnips                          | 10-3-4                | 10-3-2               | 12-3-0               |
| Tomatoes, cannery                | 10-2-4                | 10-2-4               | 10-2-4               |
| Wheat, fall seeding              | 10-2-4                | 12-2-2               | 12-2-0               |
| Wheat, spring top dressing       | 7-5-2                 | 8-6-0                | 8-6-0                |



# Orchards and Good Fruits

Northern and Western Grown

Published by  
CROP BOOK DEPARTMENT



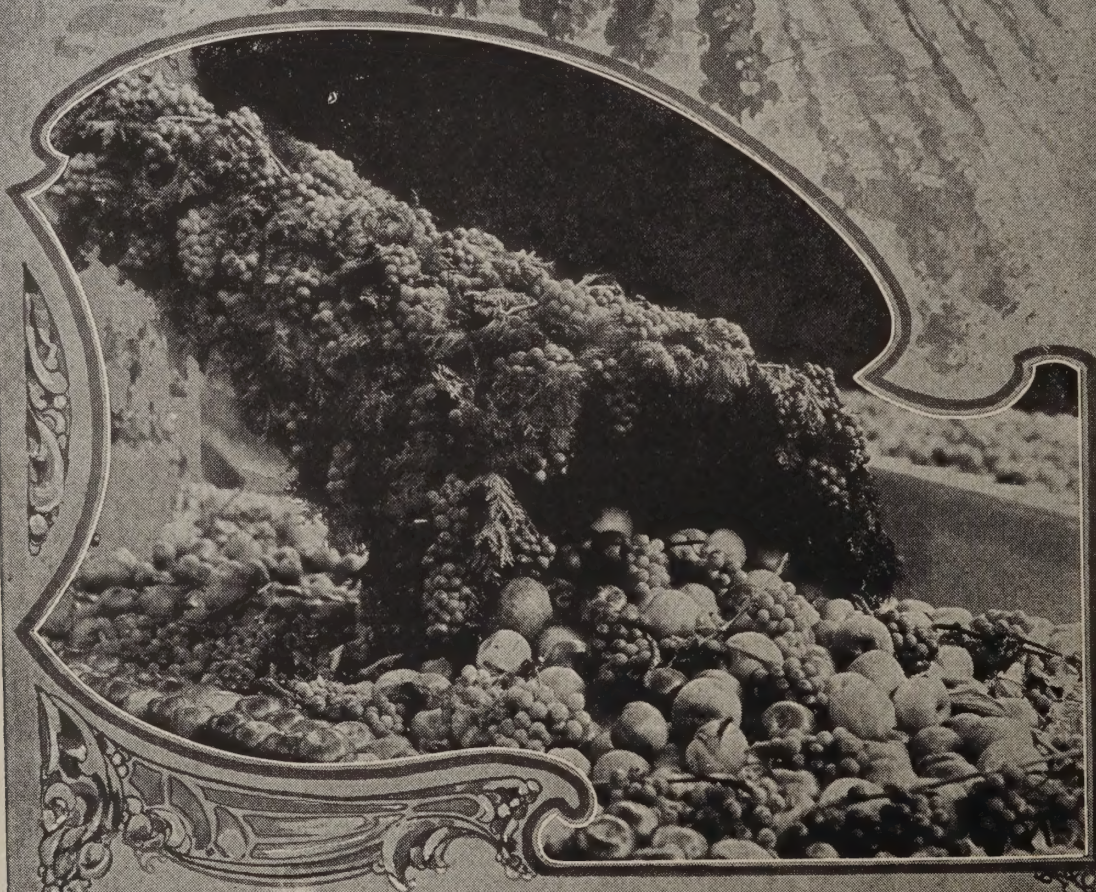
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N. C. COLLEGE OF AGRICULTURE & ENGINEERING  
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# Orchards & Good Fruits



*The horn of plenty is the symbol of wealth—  
The soil is the basis of All wealth—  
Therefore keep your soil fertile and  
it will produce wealth for you—*



# Orchards and Good Fruits

## Northern and Western Grown

Have you ever felt that the fellow who grows fruit successfully has been especially favored by Nature? It is wrong to entertain such opinions, because successful fruit growing is but the thoughtful and thorough application of tested methods and common sense.

The following pages were written by a successful fruit grower, who has had an opportunity to study the best methods employed by the growers in this country.

There are certain things common to all fruits and these have been included in the first part of the booklet.

Emphasis must be placed on the careful selection of the site and varieties. The care and management of the orchard and the proper feeding of the trees are factors which must have your serious consideration.

V-C Fertilizers are designed to meet these special needs and are used in hundreds of the most profitable orchards.

## Practical Fruit Growing

Fruit growing has always been of interest to the American farmer. The pioneers considered the home orchard an essential factor on every farm. They planted trees in the newly cleared soils which were rich in available plant food and the homes were bountifully supplied with perfect and delicious fruit. It was recognized as an important part of the diet and was depended upon to preserve the health.

As the soils became depleted in fertility and the disease and insect enemies multiplied it became more difficult to produce the perfect specimens that once had been so plentiful and thousands of starving and diseased orchards were permitted to die of neglect. Out of this discouragement came a new determination upon the part of scientists and growers to overcome the conditions that had so materially affected the fruit growing industry.

Careful study and experiments showed that many of these old neglected orchards, which were regarded as blotches on the landscape could be made productive and profitable by proper spraying, fertilization and management. That resulted in a revival in fruit growing and within the last twenty years the industry has assumed a prominent place in our agriculture. Large sections of the country have become prosperous by producing fruit that is famous the world over.

## **The Farmers Interest in Fruit Growing:**

Plenty of fruit the year around is essential to the best health and the farmer should provide an adequate supply for his family.

Many farms have mature orchards on them that are unprofitable and which the farmers are desirous of renovating and making profitable.

Another reason for the farmer being keenly interested in fruit growing is that the small commercial orchard of a few acres can be operated as a unit on the general farm more economically than it can in any other way, because the operating costs are lower and the profits relatively higher.





Intercropping Peach Orchard with Cantaloupes. Two profits can thus be realized if the proper amount of fertility is added to the soil. V-C Fertilizers will fill the needs of your soil and crop and will increase your yield.

### **The Home Orchard:**

The object of the home orchard is to furnish sufficient fruit for the family and it is important that a succession of varieties should be planted which will ripen from early season until late fall. This makes it possible to have a maximum amount of fresh fruit and plenty for canning, drying and storing. The home orchard should be as near the home as possible to facilitate care and harvesting.

### **The Commercial Orchard:**

Since it has become evident that the production of perfect fruit is no longer a matter of chance but a question of thoughtful and thorough application of tested methods, commercial fruit growing has made a stronger appeal to the farmers. The small commercial orchard operated in connection with the general farm affords the soundest business basis for profitable fruit production.

Teams and the greater part of the tools necessary for the orchard operations are already a part of the farm equipment and the overhead cost of operation is greatly reduced. The proper selection of the site and of three or four high grade commercial varieties make it possible to utilize some of the rolling land more profitably than could otherwise be done.

### **Factors to be Considered:**

The home orchard does not involve the market problems but the commercial orchard necessitates the careful study of location, soil, condition and market preferences.

The orchard should be located near a good shipping point and preference should be given to a location providing an outlet to more than one good market. If the orchard is to be comparatively small or composed of fancy varieties it should be located reasonably near a good town or city which



will provide a good local market. The matter of good roads from the farm to the loading station or local market must be given careful attention because bad roads will greatly increase cost of production and marketing. The size of the load that can be hauled is a prime factor in cost of production. The availability of extra labor is highly important if the orchard is large. The possibility of a good water supply must be settled satisfactorily before deciding to locate an orchard, because a survey of the cost of spraying farm orchards reveals the fact that where there is a water supply in the orchard the cost of spraying averages about one-half as much as it does where the water must be hauled.

### Soil:

The soil for the orchard should be well drained and should not be depleted of its natural supply of organic matter, and available plant food. A sandy clay loam seems to be very well adapted to all fruits. If a medium loam is not available the peach does better on the lighter soils while the apple, pear and cherry prefer the heavier soils. Avoid shallow soils which have unbroken rock very near the surface and soils underlaid with an impervious hard pan. The flat, poorly drained white clay soils and the level black muck soils are not adapted to orcharding.



Thousands and thousands of dollars annually are saved by the use of the Orchard Heaters. Their cost and maintenance is very small compared to the value of the crop saved.



**Site:**

After finding that soil conditions are adapted to fruit production the question of air drainage must be given consideration. The ground upon which the orchard is to be planted should be higher than the surrounding country to insure the drainage of cold air which moves from the higher ground to lower levels. Low land or valleys from which the cold air cannot escape should be avoided because the trees will be more subject to frost injury. If peaches are to be grown or if it is desired to manage the orchard under the clean culture cover crop system the orchard site should be level enough to permit cultivation without danger of washing. A gentle slope insures good water and air drainage and will permit cultivation. Steep slopes are not adapted to commercial orcharding because of the difficulty experienced in pruning, spraying and harvesting.

**Selection of Varieties:**

The choice of varieties of the several orchard fruits must be governed by a number of factors. The home orchard is primarily intended to supply fresh fruit throughout a long period. This necessitates planting of varieties having a succession of ripening dates ranging from early till late season. Personal tastes and preferences will govern the final selection.

All varieties planted must be adapted to the community in which they are to be grown and the advice of the State Agricultural Experiment Stations should be requested. The experience of growers in any locality should be studied and considered. The commercial grower must consider a number of factors when selecting varieties. The different markets have a preference for certain varieties and packages and these demands must be known. The varieties should be heavy bearers because there is considerable difference in the returns per barrel and the returns per tree. Some high priced varieties do not yield well and should be planted with caution. The fruit should have good keeping and shipping qualities and be fairly resistant to disease. The trees should be hardy, vigorous and regular bearers. There is more money in marketing a large quantity of a few standard varieties than a small amount of a large number of varieties, therefore the commercial grower should not plant more than three or four varieties of a single fruit. Beware of novelties that are not established on the market.

**Nursery Stock:**

When buying nursery stock the grower should make every effort to purchase trees that are well grown and of good size and shape for the age and variety. They should be true to name and free from insects and diseases; their appearance should indicate that they are healthy and were properly cared for after being dug from the nursery row.

One year old stock is usually recommended for planting because they are cheaper and usually suffer less shock in transplanting; they also are more easily trained. Either one year or two year old stock may be used if well grown but older trees should not be accepted.

Do not buy cheap trees and in every case deal with a reliable and established firm. The unreliable traveling nursery agent has been responsible for a great deal of disappointment in the past and should be avoided because many of them deliberately misrepresent the stock they sell.



If, as is preferable in a large majority of cases, the orchard is to be set in squares, the first step for insuring perfect alignment of trees is the establishment of a base line. Let it be assumed that this line will be on the west side of the orchard and that it will run North and South from A. to L. (see diagram page 8). This line should be straight and marked by setting a light stake in the place where each tree in this row is to be set. In like manner run the line on the east side from A. to L. and mark with stakes such places where trees are to be set, as was done on the west side. This establishes the rows running East and West, the North one being A. to A. and the South one L. to L. The next step is to open these rows by running two furrows with a turnplow turning the soil in opposite directions. This should be done by a good plowman, a well trained team and the use of guide poles. If the land has been well prepared and is comparatively level no difficulty should be experienced in making the rows straight if they are run by an experienced plowman. These rows may now be checked by running similar furrows North and South, and a tree set at each intersection. To do this establish another base line on the North side of the orchard and still another on the South side, marking the places for each tree to go in these lines. These lines are parallel with each other and at right angles with the lines on the East and West sides. Then, with the guide pole, a good plowman and team, the checking furrows may be run. Time may be saved, however, and greater accuracy secured by the use of a wire or stout twine instead of a plow for establishing the North and South rows, so that they will check with the East and West rows. The wire or twine is stretched across the rows marked East and West by the plow, at a distance from the West side base line equal to the spacing to be given the trees in the row. As a row is set the wire is moved to mark the cross alignment of the next row. This establishes North and South and East and West rows at right angles with each other, and each intersection marks the place a tree is to be set. If the North and South lines (A and A and L and L), are set first and accurately aligned and an intermediate row (FF) next set in alignment with the two already set, then these three rows will serve as guides for the accurate checking of the remaining trees to be set.



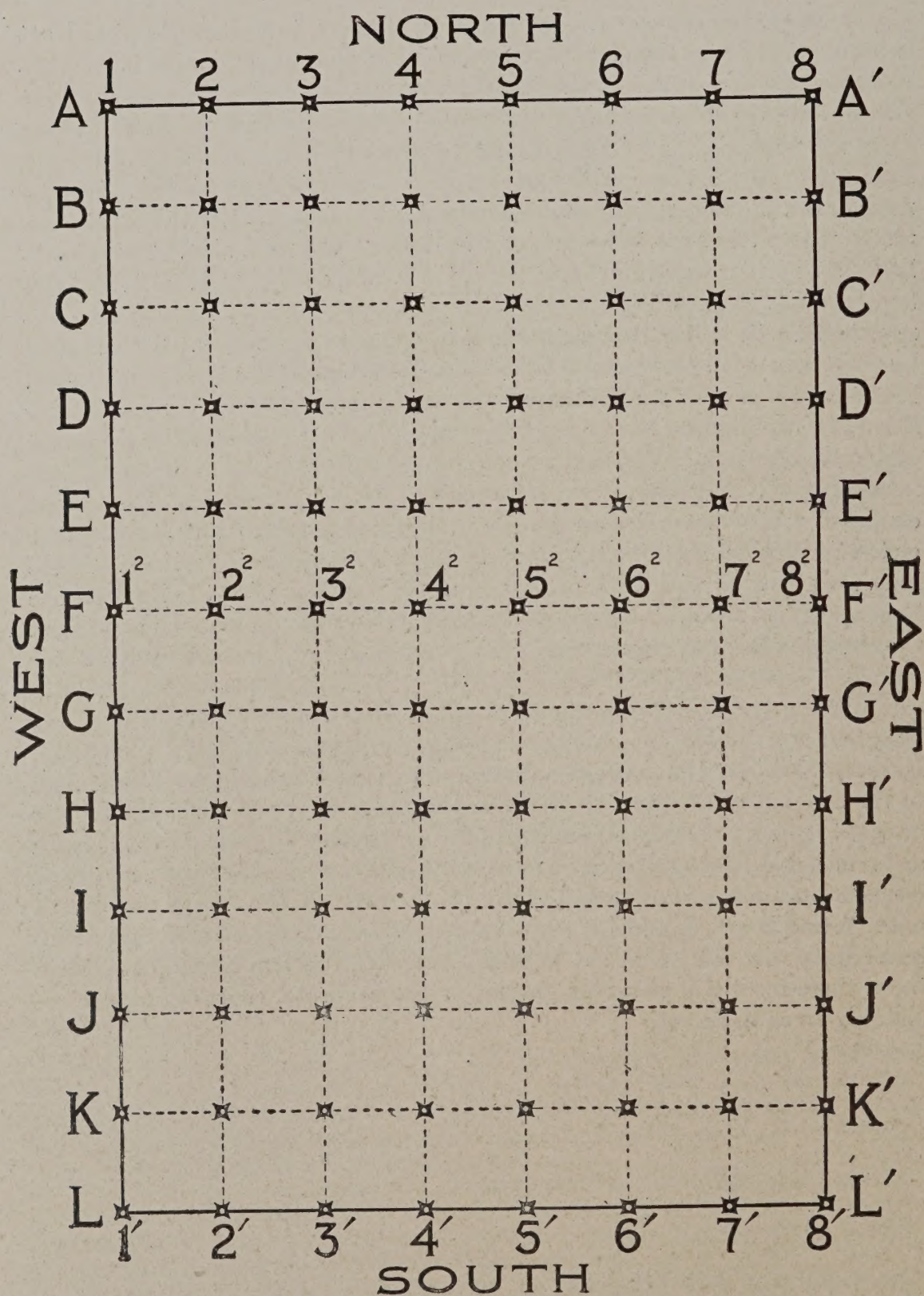


Diagram for guidance in properly laying out new Orchard. Detailed description for this diagram will be found on preceding page.



## **Spring Planting or Fall Planting:**

This subject has been the source of considerable discussion and inasmuch as both times of planting have distinct advantages the work can be successfully done at either time. If the trees have been properly stored at the nursery they will be in better condition in the spring than trees which have been exposed to severe winter weather and the possibility of being injured by the rabbits. A dry, open winter is injurious to newly set trees and there is also a risk of injury from ice forming around the crown that is escaped by spring planting. In favor of fall planting, it can be said that the trees may be set when there is more time for the work and there will be no possibility of the trees losing any vitality by being stored. By purchasing in the fall it is possible to get the pick of the stock. The roots of trees set in the fall have an opportunity to form callouses over the injured surfaces and can start growing earlier in the spring.

## **Care of Trees Before Setting:**

It is important that the trees should be given careful attention as soon as they are received from the nursery.

If the stock arrives during temperate weather it should be heeled-in. This is done by digging or plowing out a trench so the trees can be placed in it. The trees should be unpacked carefully and all bundles untied so that each tree is separate. These are laid in the trench in a slanting position with the tops to the south. Moist dirt is thrown on and worked among the roots. Sufficient dirt is then shoveled on them to thoroughly protect the crowns and roots systems. Trees received during freezing weather should be put into a cool, damp place to thaw out gradually before heeling-in. If there is danger of rabbits injuring the nursery stock, build a tight fence around the place where the trees are kept.

## **Planting Plan:**

The common plans used are the square system and the triangular system. The square system is simple and is recommended for general planting because most men understand the method of laying it out.

In this system the rows are laid out an equal distance apart each way thus making it easy to lay out, cultivate, spray and harvest the orchard crops.

The triangular or hexagonal system uses the ground more economically and enables the grower to plant about 10 per cent. more trees than is possible when using the square system. Due to this economy the system has been used in sections where the ground is very high priced but on medium priced land and on small irregular areas the advisability of using this system is questionable.

## **Planting Methods:**

If a large number of trees are to be set it is customary to use at least two or three men in the planting crew, and they should set from 300 to 400 trees per day. All broken roots should be pruned off of the tree before planting, leaving smooth, clean surfaces which will callouse easily. The holes for the trees should be dug large enough to accommodate the root systems when spread out.



The trees should be set a little deeper than they were in the nursery row and the top, rich dirt should be placed firmly about the root system before filling the hole. It is advisable to mix a little V-C Fertilizer with



In large Orchards a saving can be accomplished by using the tractor for plowing and cultivating. This tractor is hauling two gangs, one disc harrow, and one spring tooth harrow, both types being admirably suited to orchard cultivation.

this top dirt before putting it around the roots because it will provide readily available plantfood for the tree.

The following table gives the number of trees that may be planted per acre at different distances.

|                   | Square<br>System | Triangular<br>System |
|-------------------|------------------|----------------------|
| 15 x 15 feet..... | 193              | 224                  |
| 18 x 18 feet..... | 134              | 156                  |
| 20 x 20 feet..... | 108              | 124                  |
| 24 x 24 feet..... | 75               | 80                   |
| 30 x 30 feet..... | 48               | 56                   |
| 33 x 33 feet..... | 40               | 46                   |
| 35 x 35 feet..... | 35               | 41                   |
| 36 x 36 feet..... | 33               | 39                   |
| 40 x 40 feet..... | 27               | 31                   |

### Preparation of the Soil:

The preparation of the soil for the young orchard will depend upon the system of orchard management to be practiced later. This depends largely upon the contour of the land, and the paragraphs on orchard management should be considered carefully before making final decision regarding the preparation of the soil for planting.



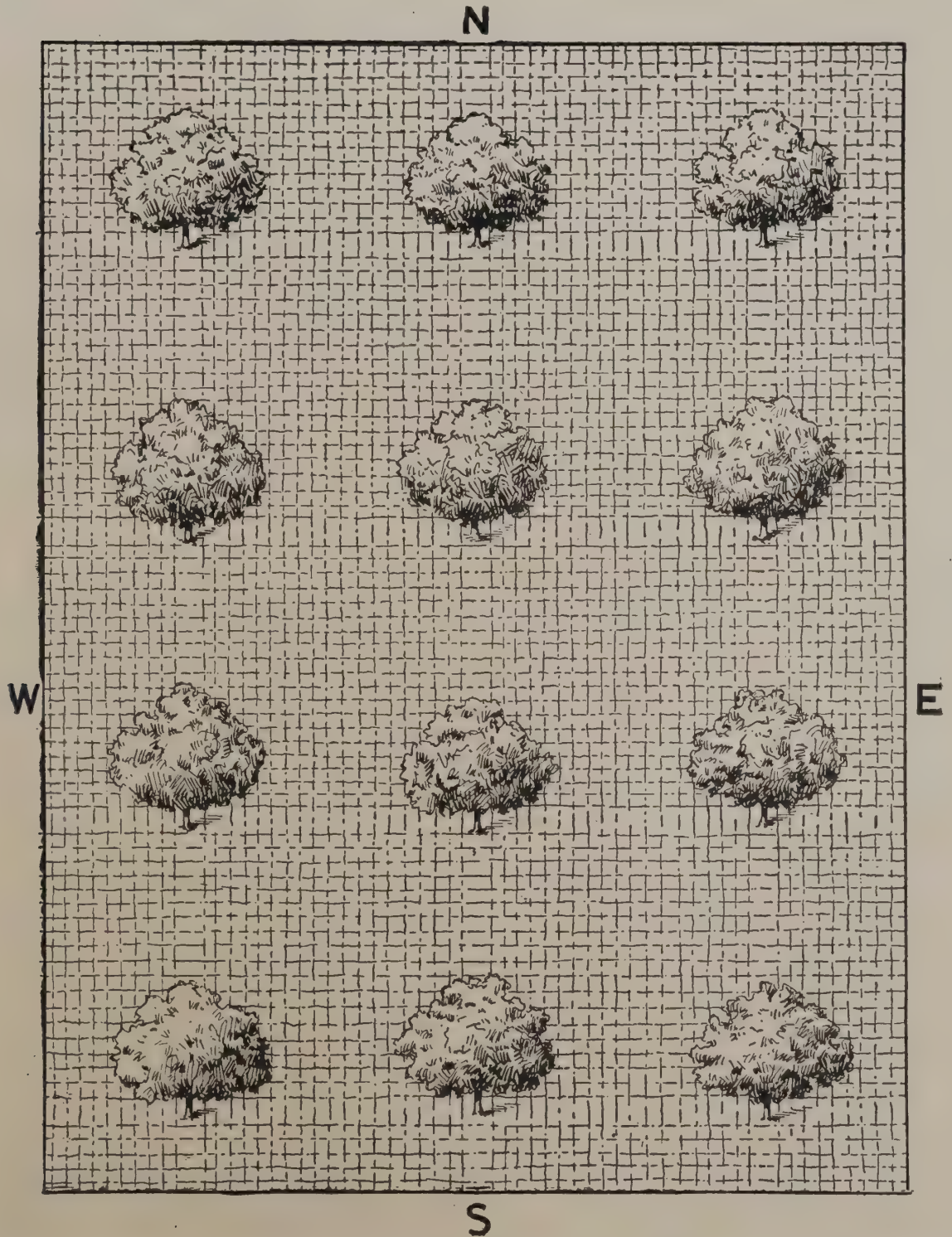


Diagram showing Proper Orchard Cultivation. The lines running North and South and East and West are lines of Cultivation. By following out this scheme the entire area will be cultivated and your soil will be in good condition and free from weeds, which is not the case in one way cultivation.



On comparatively level ground that may be plowed without danger of washing the clean-culture-cover-crop system is usually followed. It is advisable to plow and prepare the soil a few months before planting time. If fall setting is anticipated the ground should be worked early and sown to a crop in August. If the trees are to be set in the spring the ground can be plowed in the fall or early spring and thoroughly disked and harrowed before setting time. In either case a cultivated crop such as potatoes or tomatoes may be grown between the rows while the trees are young. If the orchard site is hilly so that cultivation is not advisable because of the tendency of the soil to wash, the mulch system of orchard management should be practiced throughout the life of the orchard and this has a definite bearing on the preparations for setting. This system is designed to furnish enough mulching material such as grass, straw, weeds, etc., to prevent the evaporation of the soil moisture. This is accomplished by making a mulch collar around the young trees in the spring which is heavy enough to kill the grass under it, and care should be taken to keep the material away from the tree several inches. Trees set in sod must be thoroughly mulched from time of setting and if the ground cannot furnish sufficient mulching material, extra straw or grass should be secured.

Trees managed under the sod-mulch system may suffer more from field mice than when the clean culture system is practiced and tree protectors should be put on soon after planting.



Spring plowing. The sod is turned under and furnishes valuable organic matter which loosens up the soil and increases the availability of the plant food in the soil.



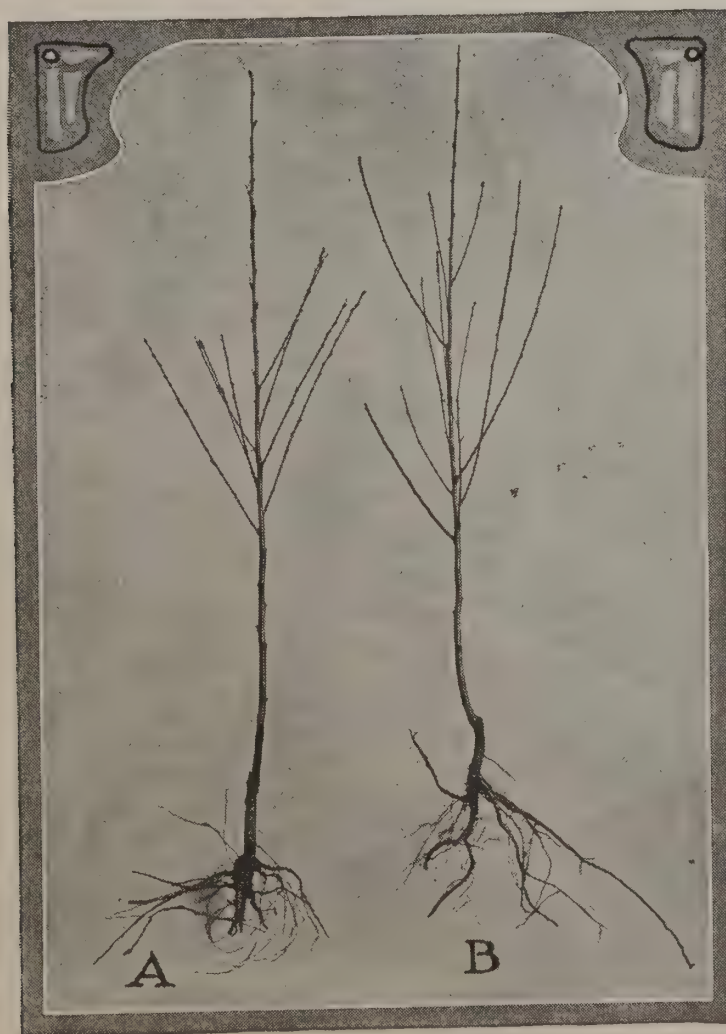
The plan is sometimes followed of plowing strips on a hilly orchard site and setting the trees in the cultivated area. The plowing is done with the contour of the hill and the middles are left in sod which prevent the greater part of the washing. This strip is sown to a cover crop each summer so the supply of organic matter may be maintained satisfactorily.

It is important to emphasize the fact that in practicing any one system, it must be done thoroughly to insure a thrifty, vigorous development of the tree.

### Pruning the Young Tree:

Pruning is important because a well developed tree may be sprayed and picked more economically than an untrained tree.

The central leader system of pruning is being adopted quite generally now, except for peaches, because it developed a stronger head with a greater bearing surface. The initial pruning is given the first spring before time for the buds to swell. On a one year old tree this consists of cutting the tree to a whip about 36 inches high. The second season about four scaffold limbs



Before being pruned. These peach trees are now headed 16 and 12 inches respectively and when set in the orchard row they will be set about 4 inches deeper than they were in the nursery row, and will be headed 12 and 8 inches respectively.





If the blossoms are to develop into high grade fruit the orchard soil must be fertile. V-C Fertilizers applied properly in your orchard will supply the proper nourishment to your trees..



should be selected that are well placed on the trunk and the balance are removed. No two limbs should be opposite each other and they should be well spaced around the tree, with each limb at a different height from the ground.

The pruning in succeeding years will consist of thinning out the interfering branches and developing a well balanced top. The top must be open enough to permit the entrance of plenty of sunlight and air. Water-sprouts should be kept off of the tree and care should be taken to see that diseased wood is removed.

### **Companion Cropping in the Young Orchard:**

In young orchards where the clean-culture cover-crop system of management is practiced it is profitable to plant such cultivated crops as early potatoes, tomatoes, and truck crops such as cabbage, beans, peas, beets, etc. These crops can be grown and removed in time to sow a cover crop such as rye which will survive the winter, hold the ground, add organic matter to the soil and take up the plantfood that becomes available during the winter season. Strips of ground five or six feet wide should be left on each side of the trees so that thorough cultivation may be given them from the time the cover crop is turned under until the cover crop is sown in the late summer. **These truck crops will pay a high profit on liberal applications of fertilizer and the soil improvement will promote vigorous development and early bearing of the trees.**



The same Peach trees as shown on page 13, after pruning. The bruised and broken roots are cut away leaving smooth wounds which heal quickly.



Strawberries and bush fruits may be grown between the rows but are not as satisfactory as the aforementioned truck crops. It is not advisable to grow hay or grain crops in the young orchard that do not permit clean cultivation and the sowing of a late cover crop.

### Renovating the Old Orchard:

On many farms there are mature orchards which may be made highly profitable by proper pruning, fertilization and orchard management. Most of these old orchards are starved and should be plowed in the early spring about four inches deep, disked and harrowed until late summer. This will overcome the sod-bound condition and conserve the moisture. An application of 400 to 500 pounds of V-C Fertilizers should be broadcasted between the rows so the trees may have sufficient available plantfood to make a good growth, mature the season's crop and form fruit buds for the next year's crop. The trees should be pruned and sprayed so they can make profitable use of the available plant food.



Crimson Clover as an orchard cover crop. Fertilizer applied to the cover crop and to the trees will benefit both in a large measure and will insure soil fertility in your orchard. V-C Fertilizers always give the highest results for all crops and on all soils.





#### INTERIOR OF PEACH CANNING FACTORY.

- A—Peaches as they come to the factory from the orchard. Women peeling peaches in the back-ground.
- B—Capping machines and cooking vats. The cans are filled here and are being sealed preparatory to being placed in the steam cooking vats.
- C—Cans in containers all ready for cooking in the steam vats.
- D—Containers holding filled cans being lowered into steam cooking vats.



## Fertilizing the Orchard:

The orchardist must appreciate the fact that the trees remain in a fixed position and that maximum production can only result from good soil management. The grain crops are fertilized and rotated to improve yields and the same treatment must be applied to the orchard because the trees utilize enormous quantities of plantfood when producing large crops. Otherwise the trees struggle for an existence and the crops are small and unsatisfactory.

Many orchards bear crops every other year. This alternate bearing habit results from the trees exhausting the supply of plantfood in maturing the crop on the trees and not having sufficient energy to mature the fruit buds for the succeeding season. The Indiana Experiment Station Bulletin



What Fertilizer will do for Apples. It was applied at the rate of  $12\frac{1}{2}$  pounds per tree in conjunction with one bale of straw annually, and on the row to the right no fertilizer was used. The differences in the yield between the fertilized row and the unfertilized row was 37 barrels of apples the fertilized having made 46 barrels and the unfertilized 9 barrels. At a fair price per barrel this would leave a handsome profit for the man who uses Fertilizer.

194 reports the renovation work in a number of orchards and shows that one ten-acre orchard which had been a liability on the farm was made to produce an annual average net return of \$168.00 per acre for five years and another which received application of 600 pounds of complete fertilizer per year was brought into annual and profitable production. The Ohio Experiment Station likewise shows that mature orchards may be made highly profitable units on the farm by proper renovation and fertilization.

Bulletin 121 of the Pennsylvania Experiment Station shows striking and convincing results from the use of fertilizer in apple orchards. Four years results on one plot which was fertilized with a complete fertilizer show that a total of 17,127 pounds of apples were produced and on a similar



plot beside it which was not fertilized only 4,557 pounds of apples were produced during the same time.

In another test covering a four year period a fertilized acre produced 513.8 bushels of apples and an unfertilized acre produced 137.7 bushels, giving 377.1 bushels in favor of fertilization.

### How to Apply Fertilizer:

It is customary to apply fertilizer to the young trees in the spring by hand, using a small hand shovel, trowel or shallow dipper for the work. The material is hauled in a wagon driven through the orchard reasonably close to the trees and is shovelled out of the bag or a tight box and spread around the trees. Do not put the fertilizer closer than a foot from the trunk. If the young orchard is to be cultivated, apply the plantfood after



Clean cultivation such as this will allow all the plant food in the soil to be used by the trees in producing a full yield of high grade fruit instead of letting weeds reap the benefit of the fertility in the soil.

the ground has been plowed and work it in with a cultivator or a rake. In sod-mulched orchards it is advisable to fertilize the trees just before applying the mulching material.

After the trees are eight or ten feet high it is more convenient to use a grain drill which has a fertilizer attachment and drive this machine within three or four feet of the trunk. Keep in mind that the feeding roots extend several feet from the body of the tree and it is these fine roots that make the most efficient use of the fertilizer.

If you grow truck crops or cover crops between the trees the fertilizer may be most conveniently applied for these crops with a regular grain drill because the intercrops utilize the plantfood that the trees do not get.

In mature orchards the fertilizer drill or the grain drill with the fertilizer attachment is generally used, and the material is spread over the greater



part of the middles. It is necessary to drive both ways through the old orchard in order to apply the fertilizer uniformly.

### Orchard Management:

The successful development of an orchard depends upon giving it good care and management at all times. The trees cannot be expected to take care of themselves and yield profitable returns. Orchards should not be planted or reclaimed in a burst of enthusiasm that will subside before the trees come into profitable bearing because such action will only result in loss and disappointment. With foresight and determination the orchard can be made very profitable and deserves the consideration of the general farmer who has rolling land or land that lies above the surrounding country.

One interested in orcharding should be acquainted with the two most successful systems of orchard management, known as the clean-culture cover-crop system and the sod-mulch system. The objects of these systems are to conserve the soil moisture and increase the fertility of the soil and either system will accomplish the desired end if carried out thoroughly.



An Indiana Peach Orchard with Cantaloupes growing between the rows of trees.

The choice between the two systems will depend upon the condition of the soil; whether or not the orchard is too rolling to cultivate and the availability of a sufficient supply of cheap mulching material.

On rolling land which is liable to wash, the mulch system should be adopted. In young orchards managed under this system the grass is cut three or four times a year, raked up and spread out around the young trees making a mulch collar eight to twelve inches thick. Care should be taken to keep the material away from the trunk of the tree at least ten inches. If the soil is not productive enough to grow sufficient grass the field should be disked, fertilized and harrowed to improve the growth. Reseeding with orchard grass may be done if the stand of grass is not good. The mulch collar around newly set trees should be about six feet in diameter and this is gradually increased as the trees get older. If it is impossible to cut



enough grass for the mulch at first, use straw, stubble clippings and cut weeds for the mulching material. It is practically impossible to grow enough material in a mature orchard and it is therefore necessary to supplement it with outside material. A well grown fifteen year old tree will require at least two bales of straw, or an equal amount of leaves, grass or weeds to make sufficient mulch.

Properly done, this system is very satisfactory because it conserves the moisture and the ground is always in good condition for hauling or spraying. An application of five to ten pounds of fertilizer per tree applied in the spring before mulching the first time is advisable in most orchards. It is necessary to guard against fire and mice injuring the trees when this system is practiced.



Intercropping with cotton on orchard land of Mr. H. C. Neil, Fort Valley, Ga. Mr. Neil is a firm believer in V-C and uses it on all his crops. Their quality and reputation attest to the soundness of his judgment.

### Clean Culture Cover Crop System:

This method involves the plowing or disking of the orchard every spring and cultivating it like a corn field until time to sow the cover crop. If the orchard is slightly rolling the plowing should be done with the contour of the land to prevent washing. The cultivation can be done with disk harrows or spring-tooth harrows and it is important to cultivate as soon as possible after every rain or at least every two weeks until time to sow the cover crop. Care must be taken in cultivating so that the trees will not be injured by the teams or implements.

This system is eminently satisfactory and may be employed in a large per cent. of the orchards.

### Cover Crops:

The continuous cultivation of any piece of land will burn the organic matter out of the soil unless manure and green crops are turned under to replenish that which is lost. The abundant supply of humus is as essential to good crop production in the orchards as it is to a crop of corn because this decaying organic matter assists in making the plantfood available to the trees. It also makes the soil more friable, and increases the ability of the



soil to maintain the best conditions of moisture. Likewise, the maximum benefits of fertilizers are obtained on soils well supplied with humus, and it is therefore important that some crop be sown in the cultivated orchards during the latter part of the summer.

It is preferable to use a crop that will live through the winter and which is adapted to a wide variety of soils. General experience has proven rye to be one of the best cover crops, because it can be sown as cheaply as any and is more likely to give a satisfactory stand than most crops. Vetch is often recommended but the seed is expensive and it is hard to get a catch on many soils. In the sections enjoying mild winters, crimson clover may be used successfully.

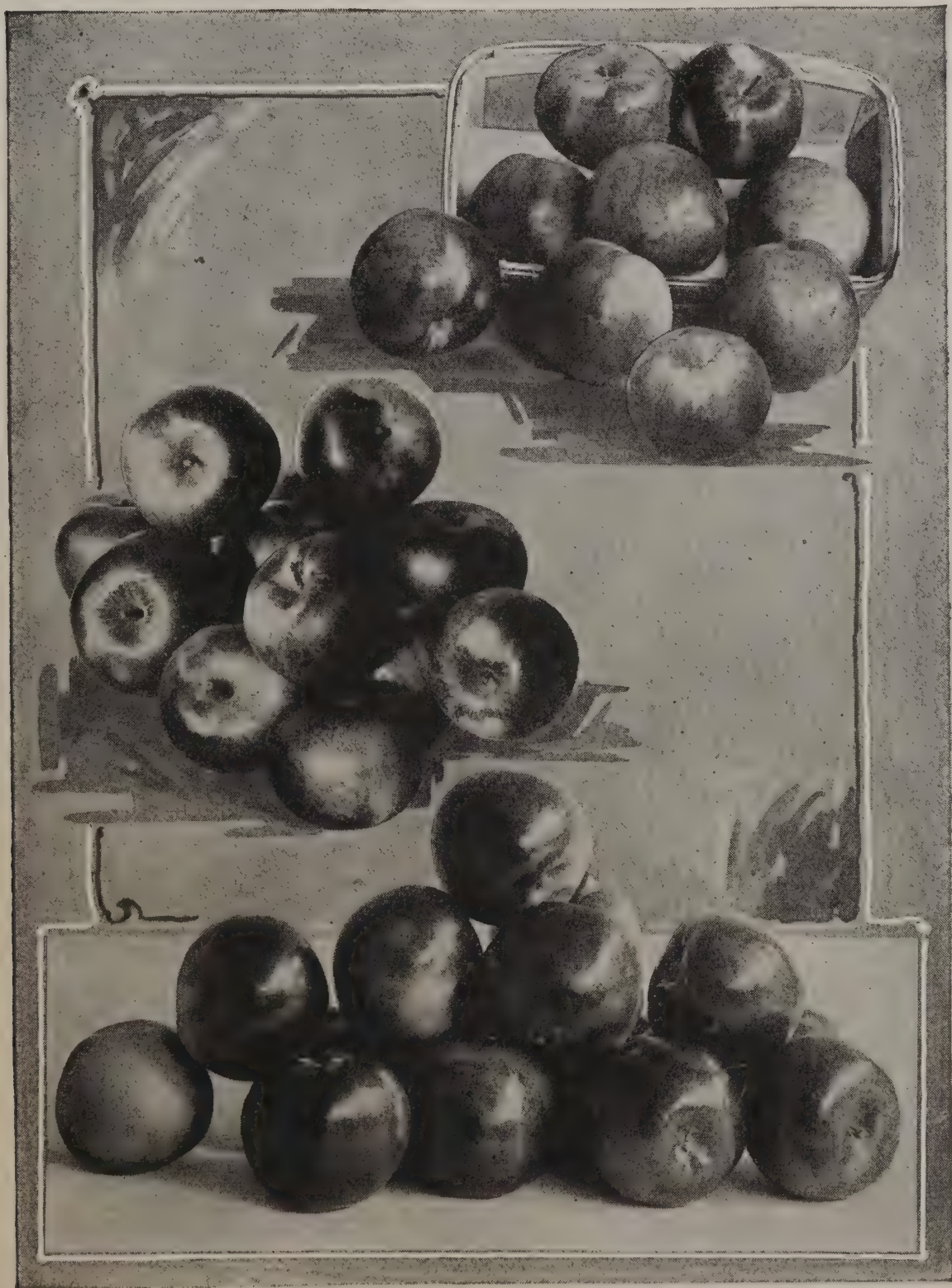


Using Buckwheat as a cover crop in an Indiana Orchard. When this crop is turned under it will return to the soil a valuable amount of organic matter which aids greatly in keeping the soil in ideal condition for crop production.

Many orchardists use cowpeas, soybeans, millet or buckwheat very satisfactorily but these crops are not winter-surviving and cannot utilize the plantfood that becomes available during the winter and early spring; therefore such a crop as rye is given preference.

It is evident that a rank growth of the cover crop is desirable in order to turn under the maximum amount of priceless organic matter and this can best be accomplished by making a liberal application of complete fertilizer at the time of sowing the cover crop. In this way the crop will predigest the plantfood and return it to the trees when the crop is turned under.





Fine specimens of three well known apple varieties; Jonathan, King David, and Baldwin.



## Apples

The Apple has long been recognized as the King of Fruits and the consuming public is more thoroughly appreciating its general use in the diet. Few fruits can be utilized in as many excellent ways as can the apple. It can be held in storage so that the market may be constantly supplied with fresh apples. It may be used in the home as a desert or may be baked, dried, canned and used for jellies or vinegar. There are more than two hundred ways of cooking this delicious fruit and the demand for it is constantly growing. As a fruit, it has been advertized extensively and today a fine apple is recognized as a representative sample of a great industry that has been put on a business basis. The barreled or boxed fruit in storage has a cash value on which the owner may borrow money. This indicates that apple growing has passed the experimental stage and is a substantial business proposition.



Two clusters of Stayman Winesap apples in "Rose Cliff" Orchard of James Craig, Waynesboro, Va. Mr. Craig uses V-C Fertilizers exclusively and it is no wonder that he is so enthusiastic over the results it brings him.

The farmer need not fear overproduction because many of the old orchards have been permitted to go into decay and the industry is getting into the hands of farmers and growers who are interested in it as a business on the farm.

### Soil and Location:

The apple will thrive in a wide variety of soils and climates and for that reason profitable crops can be grown on land that would otherwise be used for pasture only.

The general directions given in the preceding pages relative to the locating of an orchard should be observed in selecting the site for the apple



trees. The soil should not be lighter than a sandy loam because the light soils dry out easily and the apple is short lived under such conditions. The muck soils and the heavy white clay soils should be avoided but the clay loams are well adapted to apple culture.

The soils should be well drained and contain sufficient plantfood and organic matter to insure a strong, thrifty growth. A clay subsoil is to be preferred; care being taken to see that an impervious hardpan does not underlay the soil because such a condition would prevent the proper movement of the soil moisture and the deep penetration of the roots.



Some more of Mr. Craig's V-C'd apples. That Mr. Craig also sprays his apples well is plainly seen by closely observing the fruit, which still has the mixture clinging to it. V-C Fertilizers will produce greater yields for you and spraying will protect the yield from destruction by insects, etc.

### **The Young Tree:**

The experience of good growers proves that one or two year old trees are most desirable for setting. Well grown one-year-old trees are preferred by most growers because the tops have not been crowded in the nursery row and do not suffer as much from transplanting as the older trees do. Do not use trees that are older than two years and see that all nursery stock is well grown and free from insects and diseases.



## Planting and Care of the Trees:

The square system of planting is usually adopted because it is easily laid out and most convenient to work after the trees become mature. It is not usually advisable to plant the permanent trees closer than thirty-five feet and most growers prefer to have them forty feet apart.

The orchardist must keep in mind the fact that a tree in heavy bearing requires a large quantity of available plantfood and sunshine and if they are crowded the yield of fruit will be reduced in quantity and quality. Some upright growing varieties such as the Yellow Transparent and Benoni may be set closer than the spreading varieties.



Setting a young apple tree by use of the planting board. The tree should be set 3 to 5 inches lower in the orchard than it was in the nursery row. Great care should be taken in packing the soil firmly around the roots so that every root is in close contact with fine soil.

The time of setting the trees has been discussed but it is safe to say that early spring is a good time to set trees in any section of the country. A crew of two or three men is usually used if a large number of trees are to be set and 300 to 400 may be set per day. Care must be taken to see that the broken roots are cut off and that the fine top dirt is packed tightly about the root system.

It is advisable to mix a pound or two of V-C Fertilizers with this top dirt before putting it around the roots because it will provide readily available plantfood for the young trees and insure a quick, steady growth.





Apples such as these are sure to bring the top-notch price on the market. The centre view shows 20 V-C'd apples that cover the top of a barrel. Those at the top are Colorado Greenings and those at the bottom are Stark's Delicious.



If yearling trees are used they should be pruned to a whip, leaving the tree about thirty to thirty-six inches high. Two year old trees have the head already started and the problem is to select about four well spaced branches for the main scaffold limbs and remove the rest.

The trees should be gone over each spring to remove the interfering and unnecessary branches and to keep the limbs well distributed along the trunk.



Putting the finishing touches to the planting. Soil is filled in around the tree and firmly packed down with the feet until it is a little higher than the ground. Caution must be taken in tramping down the soil not to injure or bruise the young tree.

### Fertilizers:

One of the secrets of growing any crop, whether it be corn, hogs or fruit trees is to maintain a steady, thrifty growth and at no time permit this growth to be checked. This is particularly true of fruit trees and for that reason it is advisable to apply V-C Fertilizers to the trees, working it in the top soil so that it may become available to the plant. While the tree is making its growth, from three to twenty pounds per tree should be used, varying the amount with the age of the trees. The feeding roots of the tree extend out from the trunk farther than the branches and for that reason the fertilizer should not be applied close to the trunk; put it out far enough to supply the feeding roots.



# Peaches

## Northern and Western Grown

The business of growing peaches is rapidly becoming more popular and many new sections are proving to be adapted to the industry. The improvement of varieties and the marketing conditions have done much to stabilize the business and put it on a substantial foundation.

The importance of good soil management and proper fertilization is better understood than it was when a large per cent. of the peach orchards were allowed to go into decline and the proper application of these factors is making it possible for growers in less favored localities to produce profitable crops.



In this cleanly cultivated Peach Orchard note how the soil is hilled up around the trunks of the trees and also the fine example of soil mulch that is so essential to best results..

A peach orchard may be brought into profitable bearing in a much shorter time than most of the other fruits and that fact appeals to many farmers who are horticulturally inclined and have soil conditions which are adapted to the crop.

Inasmuch as the crop is very perishable, every care should be exercised in selecting the site and studying the soil and market conditions. There is a strong demand for peaches in all parts of the country during the entire peach season and this demand will continue to increase, as it has done in the past. No large plantings should be made, however, unless it is known that peach trees bear fairly regular crops in the immediate locality.



### Site and Soil:

Every factor previously mentioned in regard to the location of an orchard should be carefully considered. It is especially important that good water and air drainage should prevail and that the land be level enough to permit clean cultivation during the greater part of the growing season.

The peach does well on many types of soil but seems to prefer the lighter loam soils. Excessively rich black soils and muck soils are not adapted to this crop because of the tendency to grow too much wood instead of bearing, and the danger of winter killing is increased. Soils of good



It is wise to cultivate as closely to the trees as possible. When weeds are growing around the base of the tree they are robbing the tree of fertility which should go towards making a greater yield and higher quality of fruit.

texture which may be improved by fertilizers and cover crops are much preferred to the very rich soils. Some very profitable orchards are located on thin gravelly soils as well as on the light sandy loams.

### Soil Preparation:

The land in which the trees are to be planted should be plowed and cultivated thoroughly, making it like a garden seed-bed. This is important because the trees must make a prompt and vigorous growth.

### Varieties:

When selecting the varieties it is important to keep the market preferences in mind unless the orchard is planned entirely for home use. The Elberta and other varieties of that type are generally preferred by the commercial shipper. For local markets and home consumption the more





Views of a Peach Packing House of a V-C user.

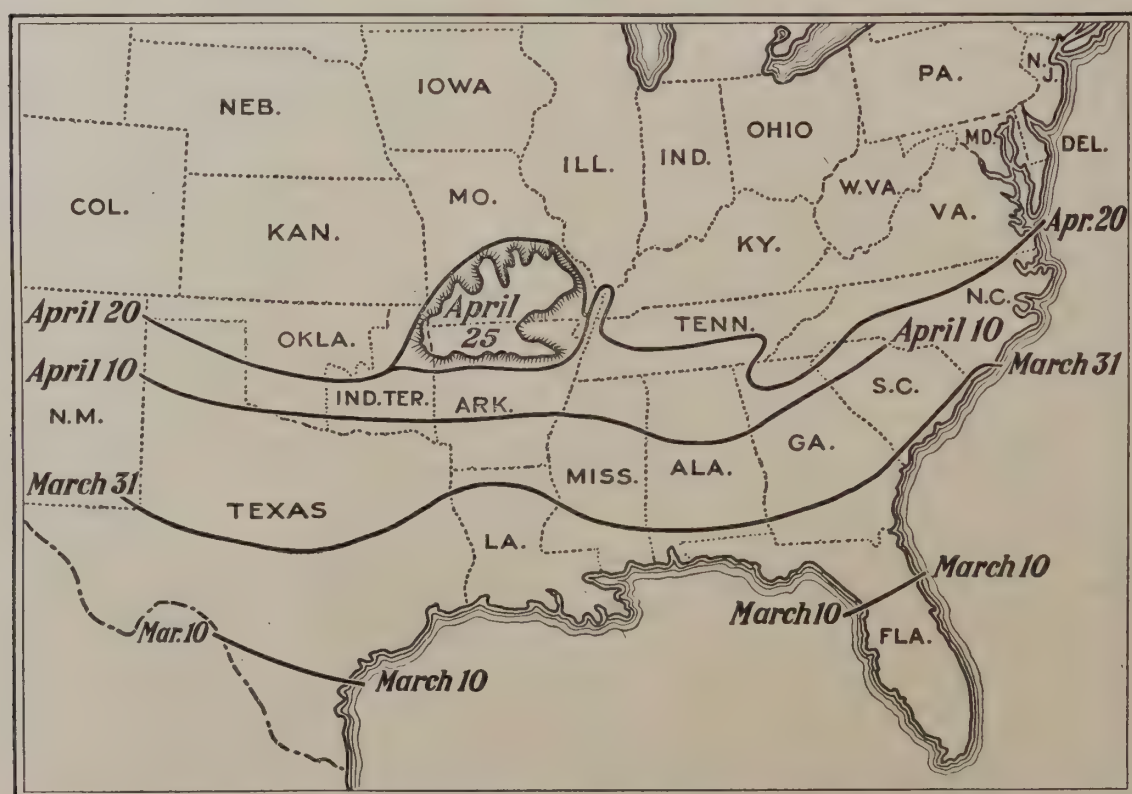
- A—Bringing in baskets of V-C'd peaches from the orchard.  
 B—Unloading the baskets from wagons onto the loading platform from where they are sent to the packers to be put in crates for the market.  
 C—Grading and packing peaches in crates for shipment to the markets.  
 D—The Peaches being inspected and the crates nailed and being carried into the cars. The price you will get on the market for your fruit will depend on the quality; and the amount of money you will get will depend on both quality and quantity. V-C helps you get both.



tender varieties having a wide range of ripening dates should be chosen. Consult the peach growers and the Experiment Station regarding the varieties to plant.

### Nursery Stock:

It is advisable to plant one year old trees which are from three to five feet high and from one-half to three-fourths of an inch in diameter. The extra large trees suffer more from transplanting and are not as desirable as the medium sizes. The trees should be well grown, true to name, healthy and free from insects and diseases. Purchase your trees from a reliable nursery of established reputation early enough to secure good trees and prompt delivery. As soon as they arrive they should be unpacked, separated and heeled in carefully in a lot where animals cannot injure them.



Map showing by heavy lines the advancement of spring, and average dates of freedom from frost.

### Distance of Planting:

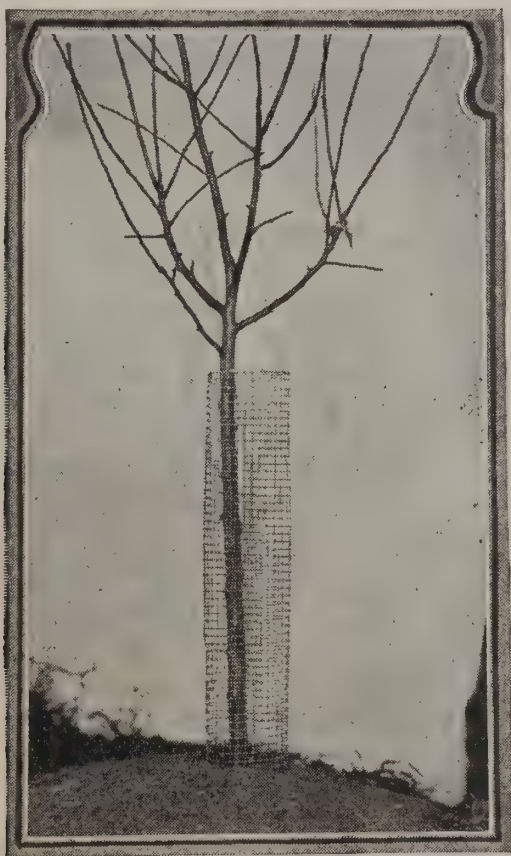
One of the great mistakes in the past has been to plant the trees too close. On good soil the trees should not be closer than 24x24 feet but on the poorer soils they may be set 20x20 feet. Attention must be given this point because the roots soon fill the allotted area.

### Fertilizing the Young Trees:

When young trees are removed from the nursery row a large number of feeding roots are broken and the root system is more or less handicapped



in furnishing a large supply of plantfood. In view of the fact that a quick and vigorous growth is essential to the best development of the tree it is recommended that 3 pounds of fertilizer should be applied per tree. V-C Fertilizers containing 2 to 4 per cent. of nitrogen, 8 to 10 per cent. of phosphoric acid and 6 to 8 per cent. of potash are especially well adapted to this use and will give the desired results. The peach tree bears fruit at an early age and needs a liberal application of these specially adapted mixtures of plant food to insure regular and profitable production.



An approved method of protecting young trees from being killed by the gnawing of small rodents. The wire netting is buried a few inches at the bottom to keep the small animals from burrowing and in that way reaching and damaging the tree.

Considerable judgment should be exercised regarding the use of nitrogen. If the soil is thin or deficient in plant food, 4 per cent. of this element may be used, but if the soil is fairly rich 2 per cent. may be too much. If the annual growth does not mature well and shows the appearance of being rank, a fertilizer containing no nitrogen should be used.

The applications may be made in the spring on the young trees and worked well into the soil above the feeding roots. After the trees come into bearing a second application should be made during June.

Peaches make a heavy draft upon the soil and unless a sufficient supply is available the trees and the size of the crop will suffer. This plantfood will influence the crop of the following seasons because peaches are grown on the wood of the previous year's growth and the importance of this wood being properly developed and matured is evident to the thinking grower.



### Time of Planting:

Spring planting of peaches is usually preferred. Localities having a late fall can set peaches in the fall.



A well grown peach tree as it comes from the nursery; healthy and well shaped, but the branches are somewhat higher than is generally preferred.

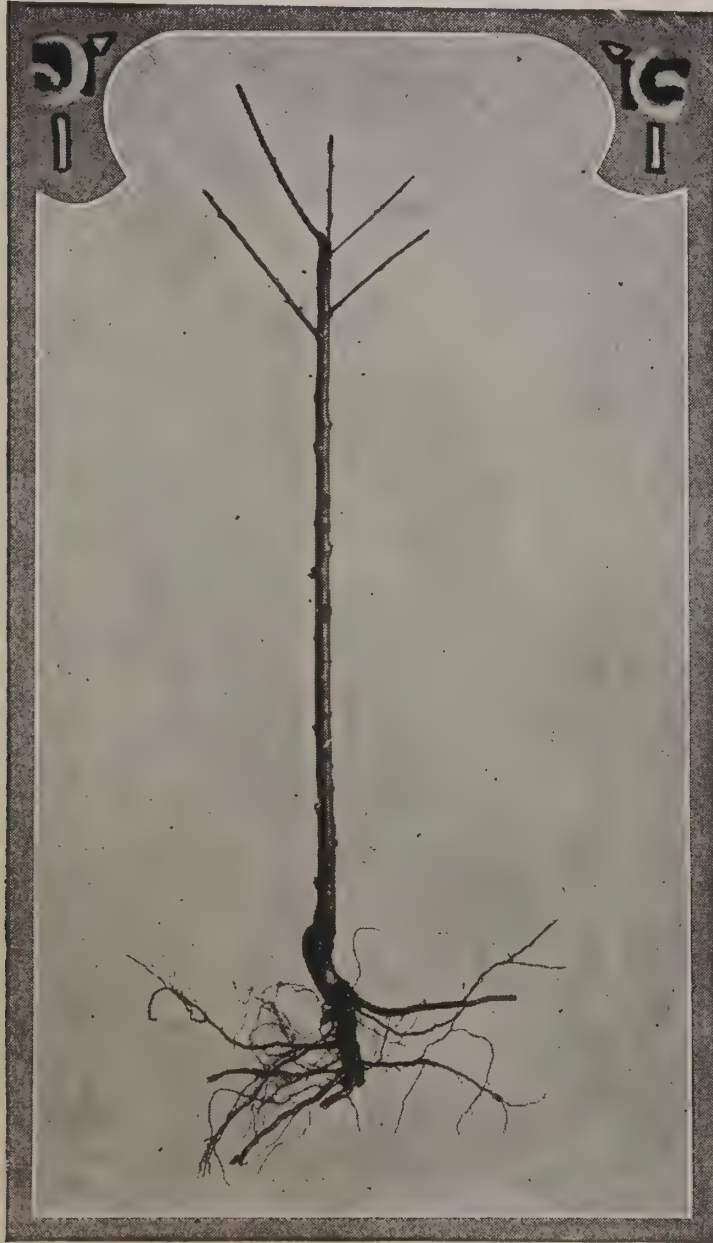
### Pruning:

The newly planted tree is cut to a whip 18 inches or two feet high. In the early spring of the second season the center is cut out and four to six lateral branches are selected as the scaffold limbs and these are severely cut back to outside buds. This starts the open head which is the most desirable type for the peach tree. Frequent and vigorous pruning is recommended because the interfering branches need to be cut out and the new growth stimulated so that a large per cent. of bearing wood may be secured.

It is customary to prune the trees in late winter or early spring. In bearing orchards it is often advisable to postpone pruning until after danger



of frost is past so that the pruning can be regulated according to the fruit in sight. If the crop has been killed, a severe pruning would be in order but if only a small proportion remains alive, very little pruning should be done.



The same tree as shown on the preceding page properly pruned and healed with broken and bruise roots cut away.

### **Cultivation:**

Clean cultivation is almost necessary for the production of a satisfactory crop. The trees are rapid growers and mature their fruit in a comparatively short time, thus making a heavy demand upon the soil moisture and plantfood. Give thorough cultivation until late summer and sow a winter cover crop in August



## Cherries

In recent years there has been an increasing interest in commercial cherry growing in the northern half of the United States and the industry is proving desirable and profitable when the orchards are reasonably near a good market.

The sour cherry has been grown in the home orchards of nearly every state of the Union, but the fact that it dislikes the very long, hot summers accounts for the small number grown in the Southern states. The cherry is a popular fruit because it comes on the market early in the season when tree fruits are in strong demand.



Of late years the cherry has come into its own as a commercial fruit. When the orchard is near a good market and the fruit is of the best quality and yield, a very profitable return is realized.

They are hardy and thrive on a wide range of soils provided they are well drained. Like the peach, the cherry is very sensitive to the ill effects of a wet soil. Sites that are particularly susceptible to early spring frosts should be avoided for a cherry orchard. A survey of the large cherry sections shows that localities enjoying the tempering effects of bodies of water are particularly favored. The same general conditions governing





A and B—Spraying an Indiana Orchard.

C—A strange rig, but the boys seem to know how to go about their spraying task.



the selection of an orchard site which were mentioned in the general discussion, should be followed. Market preferences in the community will influence the selection of varieties and the list decided upon should be referred to the State Experiment Station for their approval.

Growers usually prefer the one year old nursery tree but the two year old trees will give satisfaction if they are true to name and well-grown. The trees should be heeled in carefully when they are received. In sections where the winters are very severe, spring planting is to be preferred, while in the latitudes having mild winters the fall setting is preferable. Special attention should be given to the fact that the buds of the cherry tree swell very early in the season and the trees should be set before that time otherwise there will probably be considerable loss and disappointment. The sour



Small Cherry tree in Bloom. The cherry when properly handled is a big money crop. Fertilizer will not only increase the yield of your trees but will make the fruit larger, the meat firmer, improve the flavor and make the appearance of the fruit when properly packed most inviting.

cherries should not be set closer than 20 ft. x 20 ft. and a distance of 24 ft. x 24 ft. would be much more desirable. Sweet cherries should be set about 30 ft. x 30 ft. because the trees demand more space than the sour ones.

The young trees should be given an application of two or three pounds of a high grade V-C Fertilizers containing 2 to 4 per cent. of nitrogen 10 to 12 per cent. of phosphoric acid and 6 to 8 per cent. of potash. As the trees advance in age the application should be increased accordingly.

The young cherry trees do not require much pruning, the principal aim being to select a few well spaced scaffold limbs, similar to the apples.



After these limbs are chosen, the principal work in the future is to keep the interfering branches, diseased wood and water sprouts out of the tree.

As a rule, the cherry orchard is given clean cultivation during the growing season, provided the land is not too rolling. This work is carried on as described for the apple, and the cover crop should be sown by the first of August. In this way the supply of organic matter can be maintained and, the physical conditions of the soil improved. Careful attention to cultivation, cover crops and proper fertilization will develop an orchard of strong, thrifty trees which will yield profitable crops of cherries.



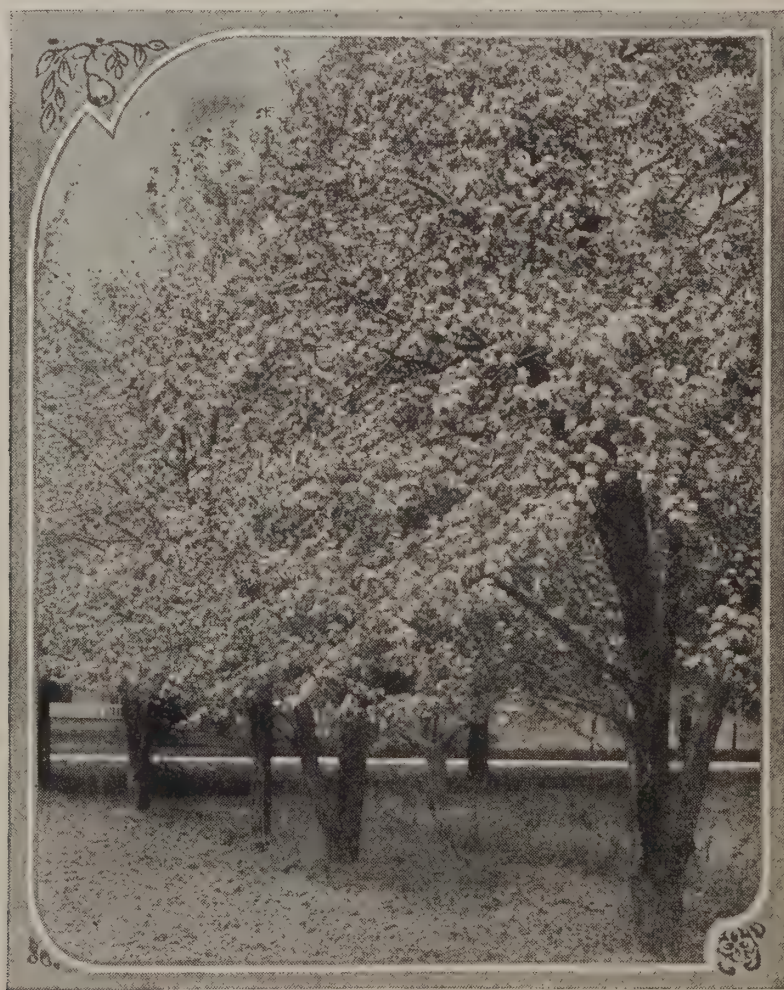
Yellow Plum Tree. The plum like other fruit trees does best in a fertile soil; liberal applications of fertilizer will add greatly to the yield and to the profits of the orchard.

In many sections cherries are attacked by insects and fungous diseases that reduce yield and the total profit from the crop. The proper use of fungicide and insecticides will control these troubles to a great extent. The direction for mixing these spray materials may be obtained from the Horticultural Department of your state Experiment Station. The method of harvesting the fruit must be given careful attention because if the cherries are to be shipped, they should be picked with the stems on. If there is a cannery in the neighborhood, the fruit can be picked without the stems providing they can be used immediately.



## Pears

The pear has been grown successfully in nearly all parts of the United States but has not assumed the commercial importance that has been accorded the apple and the peach. There are many highly profitable pear orchards located in eastern states as well as in the sections bordering the Great Lakes. The disease and insect enemies of this fruit have caused many growers to become discouraged with the crop but in the light of present day information it should be possible to extend the successful culture of the pear into every state. The market demands good fruit. The demands of the pear are very similar to those of the apple and it will be sufficient to



Seckel Pear trees in bloom. The production of fruit-buds and fruit is greatly increased by proper fertilization and V-C is that kind.

mention the important conditions that need special consideration. The pear prefers a well drained clay loam soil, even though such varieties as the Kieffer and LeConte seem to do particularly well on the lighter loams. The selection of the site should be governed by the same general factors that are considered in planting the other varieties of fruits.

An important factor in financial success of a pear orchard is the proper selection of a few satisfactory varieties that are adapted to the locality.



In buying the nursery stock one should avoid trees with soft green tops as they are undesirable. Care should be taken to plant the trees carefully and to have an inch or two of loose soil on top for a mulch to conserve the moisture. The young tree must be pruned after being set and this should consist of cutting off the branches which are less than three feet from the ground. This work should be done in the early spring before the buds begin to swell. The pruning after the first year should be limited to removing the sprouts, suckers and interfering branches. When the orchard is in full bearing some pruning must be given to open the tree up so the light may be admitted into the inside of the tree.



This Seckel Pear tree is a producer, and when your trees produce large yields of quality fruit and you are near a market there is sure to be a good profit for you.

The fertilization of the pear is an important feature in the development of a successful orchard. The production of fruit and fruit buds is greatly influenced by the supply of available plant food and the addition of suitable fertilizers will increase the yield and enhance the value of the crop. The pear tree is susceptible to the bacterial blight and for that reason stable manure and nitrogen must be used with caution. An over abundance of nitrogen will cause a rank growth of sappy wood which is easily killed by this disease and good judgment must be exercised in the choice of fertilizing materials. Young orchards on poor soils should have an application of two to three pounds per tree of a V-C mixture containing 2 per cent. of nitrogen,



10 per cent. of phosphoric acid and 6 to 10 per cent. of potash and the amount of the application should increase as the tree grows older, as is described in the case of the apple.

Some soils will grow a good tree without the aid of nitrogen and orchards on this type of soil should receive liberal applications of phosphoric acid and potash to properly balance the nitrogen in the soil. This will aid in the development of fruit buds and will pay an enormous profit on the investment.



Some excellent Plum specimens. Although not as popular as some fruits, the Plum Orchard can be made to realize handsome profits through proper care and liberal fertilization.

## Plums

The large numbers of varieties of plums now growing in this country and the special adaption of these to the different types of soil makes it possible for any one who has a piece of well drained soil to enjoy this delicious and wholesome fruit. The great secret of plum growing is to get varieties that are adapted to the locality. This is possible, if one will write their State Experiment Station for such information.

The Japanese plums, of which the Abundance and the Burbank are favorites, do well on light sandy and gravelly loam soils. The American and European varieties seem to prefer the clay loam soils. The Japanese varieties are particularly early bloomers and should be planted on a south-eastern slope if possible. Most other varieties will do well on any exposure. The specific purpose of drainage is to improve the mechanical condition of



the soil, warm and dry it during wet weather and keep it moist and cool during droughts. The plum trees should be set about twenty feet apart and some of the strong growing varieties such as the Domesticas should have twenty-five feet each way.

It is customary to plant two year old trees but in the case of some slow growing varieties three year old trees are set, however this must be done with caution. Like the peach, the plum orchard should be given shallow cultivation during the growing season and a cover-crop sown in the late summer.



Damson Blue Plums. A very popular variety for the market. For the highest yields and best quality use V-C Fertilizers in your orchard.

### Fertilization:

The plum does best on a rich fertile soil and it is unquestionably true that a liberal application of complete fertilizer will add greatly to the yield and profit. The plum should have the same general treatment that has been recommended for the peach.



**Pruning:**

The individual habits of growth of the many varieties of the plum makes it next to impossible to give general recommendations regarding pruning practices. It is sufficient to say that very little pruning is required except for those varieties that tend to develop a very thick top. On these, such pruning should be given in the very early spring as is necessary to open up the top.

The plums should be given the sprays that are recommended by the Experiment Stations and if the plums usually begin to rot just about picking time it is advisable to give them an application of Bordeaux mixture about two or three weeks before ripening.



A few clusters of Delaware grapes which if grown properly and packed well will be a money maker for you. A few dollars worth of Fertilizer will increase the value of your yield many dollars.

## Grapes

The grape is a favorite fruit in all parts of the country and every farm should have several vines. It provides a delicate fruit for the table as well as delightful grape juice, jellies, conserves and so forth. Too often the vines are neglected and soon become unproductive. Proper care and fertilization will make the grape one of the most productive and satisfying fruits on the farm.



The grape should be planted on a well drained soil on the higher lands to prevent injury by late spring frosts. In preparing land for grapes it is well to plow under a good application of manure, and work the ground deep and fine. The vines should be set about eight feet apart and may be planted in the spring or fall. It is customary to cut the roots back about one third and the top to two or three eyes. Firm the earth about the roots carefully to insure proper contact with the soil. If the soil is not rich, it is advisable to give the vines an application of fertilizer to insure good thrifty growth. The grape vine demands a large quantity of moisture and should therefore be given careful and frequent cultivation. If the land is too rolling to cultivate, the vineyard should be mulched in the same way as is recommended for other fruits.

The grape is borne on the new wood and for that reason the pruning and fertilization are important. After the young vine starts to grow only the strongest shoot should be saved and the others removed. When the vine has made a satisfactory growth, cut off all the buds below the place you



The vineyard needs cultivation the same as any other crop and also liberal fertilization. V-C Fertilizers have produced results for farmers throughout this country and its extensive use bears testimony to its high quality and productive results.

wish the head to be formed and leave about two buds at the head. During late winter of each year cut the lateral canes back to two eyes each. This will cause the vine to produce a strong growth of new wood. The fruiting shoots should be pinched back each summer as soon as the fruit has set and the water sprouts and suckers should be removed. 400 to 800 pounds of a V-C Fertilizer containing about 3 per cent. of nitrogen, 10 per cent. of phosphoric acid and 6 per cent. of potash should be applied per acre when the ground is first cultivated in the spring.

The varieties should be selected with care but the following ones are usually satisfactory for general planting. Brighton, Moore's Early, Worden, Concord, Catawba, and Niagara. The grapes should be given the regular application of Bordeaux mixture and arsenate of lead to prevent them from rotting.



## Quinces

The quince is not grown extensively on a commercial basis but to those who are interested it is fitting to say that the fruit can be grown very profitably. Like the grape and many other fruits, it is important that the quince be planted on high, well drained soil, The "Orange" variety is one of the most satisfactory commercial varieties to grow and it is recommended that they be planted 20 ft. x 20 ft. Owing to the fact that the quince is very susceptible to blight, growers are usually forced to adopt the sod-mulch system of management as applied to the grape or apple. Quinces require a large amount of plantfood and should receive from 500 to 1,000 pounds of a well balanced complete fertilizer containing from 3 to 5 per cent. of nitrogen 10 to 12 per cent. of phosphoric acid and 6 to 8 per cent. of potash when the bushes are in bearing. The single stem method of pruning is usually adopted. This top is thinned out and held back for the first three years and then allowed to grow; the cutting being confined to thinning the head out as it needs it after the first few years.



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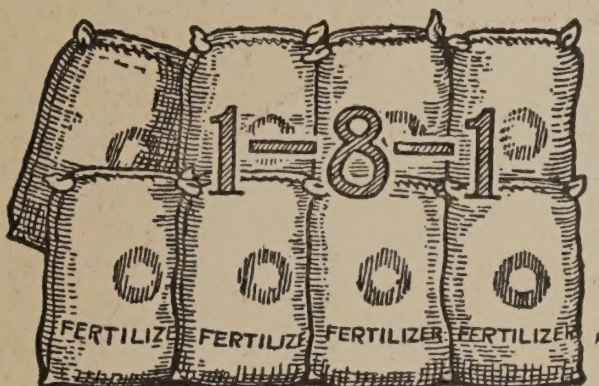
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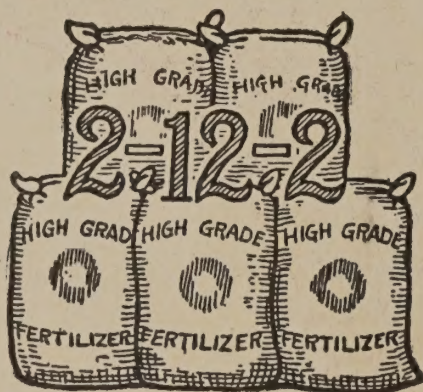


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